

Kanishk wants to sit next to Anvita in the front row of a theater. There are 20 seats in the front row. What is the probability that he gets to sit next to Anvita?

Solⁿ:- Total Number of ways Kanishk & Anvita can occupy the front row = $20 \times 19 = 380$

Case I:- If Anvita sits in first or last seat, then Kanishk can sit with her in 2 different ways.

$\boxed{A} \boxed{K} \square \boxed{K} \boxed{A}$

Case II :- If Anvita occupies seats from 2 to 19, for every seat there are 2 ways Kanishk can sit.

$\boxed{K} \boxed{A} \boxed{K} \square \square \square \square \square \square \square \square \square \square \square \square \square \square \square \square \square \square \boxed{K} \boxed{A} \boxed{K}$

So total Number of ways = $2 \times 18 = 36$

So Total possibilities where Kanishk & Anvita sit next to each other = $36 + 2 = 38$

Probability of Anvita & Kanishk sitting next to each other = $\frac{38}{380} = \frac{1}{10} = 0.1$